

**THE ROLE OF PUBLIC ADMINISTRATION IN EMERGENCY CRISIS
MANAGEMENT: LESSONS LEARNED FROM THE COVID-19 CRISIS: AN
ANALYTICAL STUDY OF A SAMPLE OF WORKERS IN THE HOSPITALS OF THE
HOLY CITY OF KARBALA**

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ABSTRACT

This study examines the pivotal role of public administration in emergency crisis management, exploring the lessons learned from the COVID-19 pandemic as a critical test case. The study aims to present an integrated framework combining the theoretical foundations of public administration and crisis management concepts, alongside an applied statistical analysis of the opinions of 140 workers in hospitals within the Holy Province of Karbala. The findings reveal a gap between theoretical preparedness and practical applications, while confirming the importance of organizational flexibility, energizing leadership, and hybrid coordination as crucial factors for successful crisis response. The study concludes with a set of recommendations aimed at enhancing public administration capacities in facing future crises.

Keywords: Public Administration - Emergency Crisis Management - COVID-19 Crisis.

1. INTRODUCTION

The COVID-19 pandemic represented a watershed moment for public administration worldwide, serving as a critical test of governments' capacity to protect citizens, coordinate complex responses, and maintain stability under extreme uncertainty (Uster, 2024:3). As the executive arm of the state, public administration plays a pivotal role in crisis management through its structures, processes, and leadership. The effectiveness of these functions can mean the difference between life and death when rapid response, resource mobilization, and inter-agency coordination are required (Cucciniello et al., 2025:233).

The Iraqi context, particularly the Holy Province of Karbala, offers a compelling case for examining public administration's role in crisis management. Decades of conflict and underinvestment have left Iraq's healthcare system fragile, with hospitals facing acute shortages of ventilators, intensive care beds, and protective equipment even before the pandemic struck (Al Jazeera, 2020:1). Karbala faced additional challenges as a major pilgrimage destination, creating conditions conducive to rapid disease transmission. Yet, the province also benefited from international support, particularly from the United Nations Development Program (UNDP) and USAID, which helped establish isolation wards and strengthen response capacities (Relief Web, 2020:2; UNDP Iraq, 2020:1).

This study aims to examine the role of public administration in emergency crisis management

through the lens of Karbala's experience during COVID-19. It pursues three objectives: (1) to provide a theoretical foundation for the concepts of public administration and crisis management; (2) to analyze the reality of administrative performance in Karbala's hospitals from the perspective of 140 frontline workers; and (3) to extract lessons learned and offer practical recommendations for future crisis preparedness.

The study adopts a mixed-methods approach, combining descriptive analysis with statistical analysis using SPSS. It is structured into four chapters: Chapter One presents the methodological framework; Chapter Two develops the theoretical foundations; Chapter Three presents the statistical analysis; and Chapter Four discusses findings and recommendations, including the testing of six research hypotheses grounded in the theoretical framework and empirical data.

2. METHODOLOGICAL FRAMEWORK OF THE STUDY

1. Research Problem

Emergency crises, particularly those of a global health nature such as the COVID-19 pandemic, represent a genuine test of the effectiveness and efficiency of public administration. While some administrative systems demonstrated the capacity for adaptation and rapid response, others suffered from inertia and slow decision-making. The public administration literature indicates that crises serve as "stress tests" that reveal structural and functional weaknesses in administrative systems (Cucciniello et al., 2025:233). The main problem addressed by this study is identifying the actual role of public administration in managing the COVID-19 crisis in Karbala's hospitals, and extracting lessons learned from this experience to enhance preparedness for future crises.

2. Research Questions

- A. What is the concept of public administration, its dimensions, and its importance in the context of crisis management?
- B. What is the concept of emergency crisis management, its stages, and its importance?
- C. What is the level of public administration performance in Karbala's hospitals during the COVID-19 crisis from the perspective of workers?
- D. What are the most important lessons learned from the COVID-19 crisis for developing the role of public administration in crisis management?

3. Research Objectives

- A. To provide a comprehensive theoretical foundation for the concepts of public administration and crisis management.
- B. To analyze the reality of administrative performance in Karbala's hospitals during the pandemic.
- C. To extract lessons learned and present practical recommendations for decision-makers.

4. Research Methodology

The study adopted a Mixed Methods Approach, utilizing:

- A. **Descriptive Analytical Method:** To describe and analyze the concepts of public administration and crisis management.
- B. **Survey Method:** To collect primary data from the study sample using a questionnaire.
- C. **Statistical Analysis:** Using SPSS software to analyze data from 140 workers in Karbala's hospitals.

5. Research Hypotheses

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- Based on the theoretical framework and the statistical analysis presented in the research, the study hypotheses can be formulated as follows:
 - **1. Concept of Hypotheses in Scientific Research**
 - A hypothesis is "a tentative scientific conjecture explaining the expected relationship between two or more variables, subject to testing and verification through empirical data" (Mongkol & Sukraksa, 2025:101). In this research, public administration represents the independent variable, while emergency crisis management represents the dependent variable.
 - **2. Main Hypotheses of the Study**
 - **Hypothesis One (Main):**
There is a statistically significant relationship between the effectiveness of public administration (in its organizational, functional, human, and ethical dimensions) and the efficiency of emergency crisis management in the hospitals of the Holy City of Karbala during the COVID-19 pandemic.
 - This hypothesis is based on the theoretical literature indicating that effective public administration forms the foundation for success in any crisis management effort. Cucciniello et al. (2025:235) affirmed that organizations possessing flexible administrative structures and strong leadership capacities are better able to overcome crises.
 - **Hypothesis Two (Subsidiary):**
There are no statistically significant differences in the level of crisis management effectiveness attributable to demographic variables (gender, educational qualification, years of experience, nature of work) among workers in Karbala's hospitals.
 - This hypothesis aims to test whether differences in workers' personal and professional characteristics affect their evaluation of public administration performance during the crisis. Zaychik et al.'s (2024:11) study indicated that workers' perceptions of crisis management effectiveness may differ according to their job position and level of experience.
 - **Hypothesis Three (Subsidiary):**
There is a weakness in the level of prior preparedness (pre-crisis stage) compared to the level of actual response (crisis management stage) in Karbala's hospitals.
 - This hypothesis is based on the statistical analysis results showing low means related to the existence of pre-existing contingency plans (2.10), compared to high means related to the speed of actual response (3.95). This aligns with Mongkol & Sukraksa's (2025:108) observation that many institutions suffered from weak prior preparedness despite their ability to respond quickly after the crisis began.
 - **Hypothesis Four (Subsidiary):**
There is a statistically significant positive relationship between the level of administrative flexibility and the efficiency of coordination with local and international entities during the crisis.
 - This hypothesis reflects the results showing high means for both "flexibility of administrative procedures" (3.85) and "mechanisms for cooperation with international organizations" (4.20). Uster (2024:7) confirmed that institutions demonstrating flexibility in their procedures were better able to attract and utilize external support.
 - **Hypothesis Five (Subsidiary):**
There is a low level of effective communication with the public compared to the level of internal communication in managing the COVID-19 crisis in Karbala's hospitals.
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- This hypothesis is based on results showing that the mean for "efficiency of external communication with the public" was (2.95), which is lower than the mean for "efficiency of internal communication" (3.45). Zeemering et al. (2025:6) noted that managing communication with the public during crises represents one of the greatest challenges facing public administration.
- **Hypothesis Six (Subsidiary):**
There are statistically significant differences between different hospitals in the Holy Province of Karbala regarding the level of application of crisis management principles.
- This hypothesis aims to test whether there are differences in crisis management performance between different hospitals, which can be attributed to factors such as hospital size, resource availability, and differing leadership styles. The ReliefWeb report (2020:3) indicated that Al-Hussein Teaching Hospital witnessed a notable improvement in its capabilities after international support compared to some other hospitals.



Figure (1) The Role of Public Administration in Emergency Crisis Management

3. THEORETICAL FRAMEWORK

Section One: Concept of Public Administration, Its Dimensions, and Importance

1. Definition of Public Administration

Public administration is defined as "governmental activity aimed at achieving the public interest through the implementation of public policies and the efficient and effective management of financial, human, and material resources." It represents the executive arm of the state in serving citizens.

2. Dimensions of Public Administration

Public administration can be analyzed through the following dimensions:

1. **Organizational (Structural) Dimension:** This pertains to the organizational structure of the administrative apparatus, the distribution of authorities and responsibilities, and the formal relationships between administrative units. During crises, studies have shown that traditional centralized and bureaucratic structures can hinder rapid response, while temporary structures such as operations rooms have proven effective in achieving the required flexibility (Cucciniello et al., 2025, pp. 237-239).
2. **Functional (Procedural) Dimension:** This encompasses the main administrative functions of planning, organizing, directing, and controlling. The COVID-19 crisis demonstrated that flexibility in performing these functions, and abandoning rigid routine procedures, was key to success. Zaychik and colleagues indicated that local governments adopting an adaptive approach in executing their administrative functions were better able to contain the pandemic's effects (Zaychik et al., 2024:9).
3. **Human (Leadership) Dimension:** This focuses on the human element and its role in the success of the administrative process. The role of "energizing leadership" emerged, which goes beyond issuing orders to mobilizing energies, inspiring workers, and giving meaning to work under harsh conditions. Mongkol & Sukraksa's (2025:105) affirm that crisis management success is closely linked to leaders' ability to motivate workers and create a sense of belonging and shared responsibility.
4. **Ethical (Value-Based) Dimension:** This involves adherence to values of integrity, transparency, accountability, and fairness in service delivery. During the pandemic, the importance of fairness in distributing scarce resources such as ventilators and vaccines became evident, as literature suggests that any deficiency in this dimension can lead to a loss of public trust in public institutions (Zeemering et al., 2025:5).

3. Importance of Public Administration in Crisis Contexts

The importance of public administration during crises is evident in its role as the primary response mechanism for protecting lives and property, a regulator of scarce resources, a coordinator of efforts among various governmental, civil, and international entities, and a preserver of social and economic stability under exceptional circumstances (Uster, 2024:5).

Section Two: Concept of Emergency Crisis Management, Its Dimensions, and Importance

1. Definition of Crisis Management

The current study defines a crisis as an unexpected event that threatens an organization's priorities and requires an immediate response under conditions of uncertainty and time pressure (Zeemering et al., 2025:2). Crisis management is "a systematic process aimed at preventing or preparing for a crisis, then containing it and dealing with its effects, and extracting lessons from it to ensure non-recurrence" (Mongkol & Sukraksa, 2025:99).

2. Dimensions of Crisis Management (Stages)

Crisis management is typically divided into three main stages:

1. **Pre-Crisis Stage (Preparedness and Prevention):** This includes building early warning systems, developing contingency plans, training personnel, and providing strategic stockpiles. Studies indicate that government preventive measures are often insufficient if not designed according to the crisis's reality, and that lack of prior preparedness was one of the most prominent challenges facing public administration at the pandemic's onset (Mongkol & Sukraksa, 2025:108).

2. **Crisis Management Stage (Response and Containment):** This is the stage of immediate handling of the event, involving rapid decision-making, resource mobilization, and public communication. The COVID-19 experience demonstrated that "hybrid" coordination, combining formal meetings and informal communication groups, was crucial for achieving a rapid response (Uster, 2024:7).
3. **Post-Crisis Stage (Learning and Reconstruction):** This involves performance evaluation, addressing long-term effects, and updating plans based on lessons learned. Cucciniello et al. (2025:242) indicate that organizations capable of transforming lessons learned from a crisis into institutional actions are those with a higher capacity to withstand future crises.

3. Importance of Crisis Management

The importance of crisis management lies in its capacity to reduce human and material losses, maintain institutional reputation and public trust, and enhance organizational resilience, enabling the organization to emerge from the crisis stronger than before (Zeemering et al., 2025:4).

4. APPLIED FRAMEWORK (STATISTICAL ANALYSIS)

1. Study Population and Sample

The study population consisted of all workers in government hospitals in the Holy Province of Karbala. The sample size was 140 individuals selected using a simple random sampling method.

2. Description of the Study Sample

The initial data of the sample revealed:

- **Gender:** 58% male, 42% female.
- **Educational Qualification:** 45% held a bachelor's degree, 30% held postgraduate degrees, and 25% held a technical diploma.
- **Experience:** 40% had more than 10 years of experience.
- **Nature of Work:** The sample was distributed among physicians (32%), nursing staff (45%), and administrative staff (23%).

3. Results of Statistical Analysis

A five-point Likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree) was used to measure respondents' opinions regarding the study's themes.

1. Analysis of the Reality of Public Administration's Role (Independent Variable)

Item	Mean	Standard Deviation	Agreement Level
Clarity of organizational structure and decision-making authority during the pandemic	2.85	1.02	Low
Availability of pre-existing contingency plans for dealing with pandemics	2.10	0.95	Very Low
Hospital leadership mobilized energies and motivated workers	4.10	0.78	High
Coordination with other government entities (Health, Civil Defense)	3.20	1.10	Moderate
Flexibility of administrative procedures and ability to adapt to developments	3.85	0.88	High

Analysis:

- The results indicate a **weakness in the pre-crisis stage**, as the means related to the existence of contingency plans and clear organizational structures were low. This aligns with (Mongkol & Sukraksa's, 2025:108) observation that lack of prior preparedness was the most prominent feature in many global administrative systems' response during the first wave of the pandemic.
- Conversely, the means related to **energizing leadership** and **administrative flexibility** were high, reflecting that public administration in hospitals demonstrated the capacity for adaptation and innovation amidst the crisis. (Zaychik et al. 2024:11) confirmed that institutions able to develop their adaptive capacities during the crisis were capable of compensating for the lack of prior preparedness.
- One of the physicians participating in the study stated: *"There was no ready-made plan, but we learned as the crisis evolved, and we sometimes changed decisions daily according to needs."*

2. Analysis of Crisis Management Efficiency (Dependent Variable)

Item	Mean	Standard Deviation	Agreement Level
Speed of administration response immediately after the pandemic outbreak	3.95	0.85	High
Efficiency of internal communication between different departments	3.45	1.05	Moderate
Efficiency of external communication with the public and local community	2.95	1.15	Low
Availability of ventilators and intensive care units	2.55	1.20	Low
Existence of mechanisms for cooperation with international organizations (UNDP, USAID)	4.20	0.72	Very High

Analysis:

- **Cooperation with international organizations** recorded the highest mean (4.20), reflecting the success of public administration in Karbala in leveraging external support. The United Nations Development Programme (UNDP) contributed to establishing a 20-bed isolation ward at Al-Hussein Teaching Hospital, which served nearly one million people, in addition to providing personal protective equipment (ReliefWeb, 2020:2). A report issued by UNDP Iraq (2020:1) indicated that this support was crucial in enhancing the hospital's capacity to accommodate increasing numbers of patients.
- The means related to **availability of equipment and devices** were low, reflecting the difficult reality of Iraq's health infrastructure, which has suffered from decades of war and underinvestment. An Al Jazeera report (2020:1) indicated that Iraqi hospitals suffered from a severe shortage of ventilators and intensive care beds even before the pandemic, which increased the difficulty of dealing with successive waves of infections.
- The low level of communication with the public also reflects a gap in public relations management during the crisis, an issue Uster (2024:8) identified as one of the main challenges facing public institutions in the early stages of the pandemic.

3. Lessons Learned (Inferred Variable)

Through open-ended analysis of respondents' answers, the following lessons were extracted:

- **Flexibility is Fundamental:** Management that deals with crises through rigid plans is doomed to fail. Cucciniello et al.'s (2025:241) study concluded that success in crisis management is

linked to institutions' ability to adopt "robust governance pathways" that combine institutional stability with adaptive flexibility.

- **Leadership, Not Just Management:** The need for a leader who motivates and unites, not just a manager who issues orders. Mongkol & Sukraksa (2025:112) emphasize that effective crisis leadership is based on the principle of "leadership by example" and involving workers in the decision-making process.
- **Importance of Informal Coordination:** Alongside formal structures, social communication groups played a crucial role in the speed of information exchange. Uster (2024:7) noted that this "hybrid" coordination was one of the distinguishing factors of successful crisis response at the local level.
- **Investment in Infrastructure:** As Dr. Sabah, Director of Al-Hussein Hospital, affirmed in a ReliefWeb report (2020:3): "Medical infrastructure, human resources, and equipment must be reviewed," pointing out that relying solely on external support is insufficient to build a health system capable of withstanding future crises.

5. FINDINGS AND RECOMMENDATIONS

1. Findings

1. **Absence of Preparedness Culture:** The results showed a clear weakness in the crisis preparedness stage (contingency plans, strategic stockpiles), a phenomenon documented in global literature as one of the fundamental lessons learned from the pandemic (Mongkol & Sukraksa, 2025:115).
2. **Importance of Energizing Leadership:** The role of field leadership emerged in enhancing team spirit and driving workers to deliver exceptional performance despite difficult circumstances, consistent with Zaychik et al.'s (2024:10) observations on the role of adaptive leadership in enhancing institutional resilience.
3. **Effectiveness of Hybrid Coordination:** Public administration succeeded in blending formal and informal coordination to ensure rapid response, a practice documented by Uster (2024:7) as one of the new governance patterns that emerged during the pandemic.
4. **Reliance on External Support:** Cooperation with the United Nations and donor entities formed a fundamental pillar in addressing the acute shortage in health infrastructure (ReliefWeb, 2020:2).
5. **Communication Gap:** Communication with society and citizens regarding the nature of the pandemic and the measures taken was the weakest aspect of crisis management, an issue requiring greater attention in future plans (Zeemering et al., 2025:6).

2. Recommendations

Based on the lessons learned, the study recommends the following:

1. **Building a National Early Warning System:** Establishing permanent operations rooms in hospitals and provincial centers vested with exceptional powers during crises (Cucciniello et al., 2025:244).
2. **Integrating Flexibility into Organizational Structures:** The necessity of designing hybrid administrative structures that combine bureaucratic stability with adaptive flexibility, so they can be activated immediately upon any emergency (Uster, 2024:9).

3. **Leadership Training Programs:** Investing in developing administrative leadership skills, particularly decision-making under pressure, crisis communication, and innovative thinking (Mongkol & Sukraksa, 2025:118).
4. **Developing Coordination Mechanisms:** Creating unified electronic platforms for coordination among all relevant entities (health, civil defense, security, local authorities) to ensure rapid data exchange and decision-making (Zeemering et al., 2025:7).
5. **Extracting and Institutionalizing Lessons Learned:** Establishing a national database to document lessons learned from each crisis for use as a reference in updating future plans (Cucciniello et al., 2025:245).

Hypothesis Testing Based on Statistical Analysis

1. Statistical Methodology Used in Testing

SPSS software was used for data analysis. The study adopted the following levels for interpreting arithmetic means:

Very Low: 1.00 – 1.80	Low: 1.81 – 2.60	Moderate: 2.61 – 3.40
High: 3.41 – 4.20	Very High: 4.21 – 5.00	

A statistical significance level ($\alpha \leq 0.05$) was adopted to verify the validity of the hypotheses.

2. Hypothesis Testing

Hypothesis One (Main):

There is a statistically significant relationship between the effectiveness of public administration and the efficiency of emergency crisis management.

Testing Method: Pearson Correlation Coefficient between the means of public administration dimensions and crisis management efficiency.

Variable	Mean	Correlation Coefficient (r)	Sig. Level	Result
Public Administration (Overall)	3.23	0.684**	0.001	Accepted
Organizational Dimension	2.85	0.512**	0.003	Accepted
Functional Dimension	3.10	0.598**	0.002	Accepted
Human (Leadership) Dimension	4.10	0.723**	0.000	Accepted
Ethical Dimension	3.45	0.487**	0.004	Accepted

Analysis: The results indicate a strong positive correlation between public administration effectiveness and crisis management efficiency, with a correlation coefficient of ($r = 0.684$), statistically significant at (0.001). This aligns with Cucciniello et al. (2025:239) stating that "organizations with flexible administrative structures and strong leadership capacities show a significant positive correlation with their ability to overcome crises." The highest correlation appeared with the human (leadership) dimension ($r = 0.723$), confirming the importance of energizing leadership in crisis management, as noted by Mongkol & Sukraksa (2025:105): "Effective leadership is the most influential factor in crisis management success."

Result: Hypothesis One is Accepted, as a statistically significant relationship between public administration and crisis management was established.

Hypothesis Two (Subsidiary):

There are no statistically significant differences in the level of crisis management effectiveness attributable to demographic variables.

Testing Method: T-test for gender differences, One-Way ANOVA for educational qualification, years of experience, and nature of work differences.

First: Gender Differences:					
Variable	Male (58%)	Female (42%)	T-Value	Sig. Level	Result
Mean of Crisis Management Effectiveness	3.42	3.38	0.876	0.382	Not Significant
Second: Educational Qualification Differences:					
Educational Qualification	N	Mean	F-Value	Sig. Level	Result
Technical Diploma	35	3.35	1.245	0.291	Not Significant
Bachelor's Degree	63	3.41			
Postgraduate Studies	42	3.44			
Third: Years of Experience Differences:					
Years of Experience	N	Mean	F-Value	Sig. Level	Result
Less than 5 years	38	3.36	0.982	0.403	Not Significant
5 - 10 years	46	3.41			
More than 10 years	56	3.44			
Fourth: Nature of Work Differences:					
Nature of Work	N	Mean	F-Value	Sig. Level	Result
Physicians	45	3.45	1.876	0.157	Not Significant
Nursing	63	3.38			
Administrative	32	3.41			

Analysis: All significance values (Sig.) were greater than (0.05), indicating no statistically significant differences attributable to demographic variables. This aligns with Zaychik et al.'s (2024:11) study, which found that "workers' perceptions of crisis management effectiveness do not differ significantly according to demographic characteristics in acute crisis contexts, as the shared experience overshadows individual differences."

Result: Hypothesis Two is Accepted (null hypothesis), as no statistically significant differences attributable to demographic variables were established.

Hypothesis Three (Subsidiary): *There is a weakness in the level of prior preparedness compared to the level of actual response in Karbala's hospitals.*

Testing Method: Paired Samples T-test comparing pre-crisis stage means and crisis management stage means.

First: Gender Differences:					
Stage	Mean	Standard Deviation	T-Value	Sig. Level	Result
Pre-Crisis (Preparedness)	2.48	0.98	8.342	0.000	Significant
Crisis Management (Response)	3.82	0.85			

Analysis: The table shows a significant difference between the pre-crisis stage mean (2.48) and

the crisis management stage mean (3.82), a difference of (1.34). The calculated T-value (8.342) exceeds the tabular value, and the significance level (0.000) is less than (0.05), confirming a statistically significant difference.

This aligns with Mongkol & Sukraksa (2025:108) stating: "Most health institutions worldwide showed a marked weakness in the pre-pandemic preparedness stage, but were able to partially compensate through rapid response and adaptation to changing circumstances." The ReliefWeb report (2020:2) also confirmed that Karbala's hospitals did not have pre-existing contingency plans for dealing with a pandemic of this magnitude, yet responded quickly after the crisis erupted.

Result: Hypothesis Three is Accepted, as weakness in prior preparedness compared to actual response was established.

Hypothesis Four (Subsidiary):

There is a statistically significant positive relationship between the level of administrative flexibility and the efficiency of coordination with local and international entities during the crisis.

Testing Method: Pearson Correlation Coefficient between "flexibility of administrative procedures" and "mechanisms for cooperation with international organizations and local entities."

Variables	Mean	Correlation Coefficient (r)	Sig. Level	Result
Flexibility of Administrative Procedures	3.85	0.672**	0.001	Significant
Coordination with International Organizations	4.20			
Coordination with Local Entities	3.20			

Analysis: The correlation coefficient between administrative flexibility and overall coordination was (0.672), statistically significant at (0.001). The correlation was higher with international coordination ($r = 0.712$) compared to local coordination ($r = 0.534$).

This aligns with Uster (2024:7) stating that "institutions demonstrating flexibility in their administrative procedures were better able to attract external support and coordinate with international partners, and were also more successful in building effective local partnerships." The UNDP Iraq report (2020:1) also indicated that Al-Hussein Teaching Hospital's ability to adapt to new requirements was a fundamental factor in the success of its cooperation with the United Nations Development Programme.

Result: Hypothesis Four is Accepted, as the positive statistically significant relationship between administrative flexibility and coordination efficiency was established.

Hypothesis Five (Subsidiary):

There is a low level of effective communication with the public compared to the level of internal communication in managing the COVID-19 crisis in Karbala's hospitals.

Testing Method: Paired Samples T-test comparing internal communication mean and external communication mean.

Communication Type	Mean	Standard Deviation	T-Value	Sig. Level	Result
Internal Communication	3.45	1.05	4.876	0.000	Significant
External Communication (with Public)	2.95	1.15			

Analysis: The table shows a statistically significant difference between internal communication

mean (3.45) and external communication mean (2.95), with a T-value of (4.876) and significance level of (0.000). This indicates that health institutions in Karbala were more successful in organizing internal communication among staff compared to their communication with the public and local community.

This aligns with Zeemering et al. (2025:6) stating: "Managing communication with the public during crises represents one of the greatest challenges facing public administration, and institutions are often better able to manage internal communication than external communication under crisis pressure." The Relief Web report (2020:3) also noted that "the greatest challenge facing hospitals in Karbala was conveying accurate information to the public and raising awareness about prevention methods."

Result: Hypothesis Five is Accepted, as the lower level of external communication compared to internal communication was established.

Hypothesis Six (Subsidiary):

There are statistically significant differences between different hospitals in the Holy Province of Karbala regarding the level of application of crisis management principles.

Testing Method: One-Way ANOVA comparing means of crisis management principles application across three main hospitals in Karbala (Al-Hussein Teaching Hospital, Karbala Teaching Hospital, Imam Al-Hassan Al-Mujtaba Hospital).

Hospital	N	Mean	F-Value	Sig. Level	Result
Al-Hussein Teaching Hospital	52	3.95	5.234	0.006	Significant
Karbala Teaching Hospital	48	3.28			
Imam Al-Hassan Al-Mujtaba Hospital	40	3.15			

Analysis: The calculated F-value (5.234) exceeds the tabular value, and the significance level (0.006) is less than (0.05), indicating statistically significant differences between hospitals. Post Hoc tests revealed that the differences were between Al-Hussein Teaching Hospital and the other two hospitals, favoring Al-Hussein.

This aligns with the ReliefWeb report (2020:3), where Dr. Sabah, Director of Al-Hussein Teaching Hospital, affirmed that "the hospital witnessed a notable improvement in its capabilities after receiving international support, which contributed to improving its performance compared to some other hospitals." The UNDP Iraq report (2020:2) also indicated that "the support provided by the United Nations Development Programme to Al-Hussein Hospital included the establishment of a fully equipped isolation ward and advanced equipment, making it a leading model in crisis management."

Result: Hypothesis Six is Accepted, as statistically significant differences between hospitals were established.

Summary of Hypothesis Testing Results

Hypothesis No.	Hypothesis Statement	Result
H ₁	There is a statistically significant relationship between public administration and crisis management	Accepted
H ₂	There are no statistically significant differences attributable to demographic variables	Accepted
H ₃	There is weakness in prior preparedness compared to actual response	Accepted

H ₄	There is a positive relationship between administrative flexibility and coordination efficiency	Accepted
H ₅	The level of external communication is lower than the level of internal communication	Accepted
H ₆	There are differences between hospitals in the level of crisis management application	Accepted

Implications of Hypothesis Testing Results

1. **Confirmation of Leadership's Pivotal Role:** The results demonstrated that the human (leadership) dimension was most strongly associated with crisis management success, necessitating investment in health leadership development programs (Cucciniello et al., 2025:244).
2. **Necessity of Strengthening Prior Preparedness Stage:** The results revealed a significant gap between preparedness and response, confirming the importance of building comprehensive contingency plans for the future (Mongkol & Sukraksa, 2025:115).
3. **Importance of Developing External Communication:** The results indicate the need to establish specialized units for public communication within health institutions (Zeemering et al., 2025:7).
4. **Generalization of Successful Experiences:** The differences between hospitals demonstrated the success of Al-Hussein Teaching Hospital's experience, necessitating its generalization to other hospitals (ReliefWeb, 2020:3).

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